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| 90 minutes | |  |
|  | Math Learning Goals  Participants will explore, discuss, understand:   * different meanings and representations of fractions * how their own experiences may influence and/or limit the types of fractions and/or representations they typically use in their teaching practice | Materials   * posted agenda and session goals * begin list of instructional strategies used * masking tape |
|  | Should we have a ppt template that we can use for each breakout session?  Introduction (10 min.)  - introduce ourselves  - give overview of session goals and session agenda  - give info re today’s plenary sessions  - leave norms for Breakout 2 after Shelley has given CAMPPP norms?  - housekeeping items – agenda for rest of day, washrooms, drinks, who to talk re facility issues (probably Kaye?)  Can we leave this activity to Breakout 2?  Individual 🡪Sticky Note Bar Graph (10 min.)  - ask participants to introduce themselves at their tables – name, where/what they teach  - ask participants to write on sticky notes what courses they will teach next year, or what courses they want to focus on during CAMPPP – one course per sticky note – and put them on posted chart paper (or wall) to make sticky note bar graph    Whole Group 🡪 Fetter NCTM 2011 (5 min.) <http://www.screencast.com/t/dApzpmmZ>  Uses the question prompts of “What do you notice?” and “What do you wonder?” as a starting point for discussions and problem solving.  Individual 🡪 Notice and Wonder worksheet (5 min.)  Think about your experiences with students as they work with fraction concepts – wherever and however they come up in the Gr. 9-12 curriculum. Think about watching them, listening to them, talking to them, and reviewing their work. What have you noticed? What do you wonder? Take a few minutes to jot down some thoughts on the worksheet.  Groups of 4 or 5 🡪 Share thoughts from worksheet (10 min.)  Share thoughts from worksheet in small group. Take this opportunity to introduce yourselves. Select 1 or 2 items from small group share to be shared with large group.  Whole Group 🡪 Share items from small group (10 min.)  Each group shares 2 items from small group discussion – from either the Notice or Wonder column or both. We could record this on chart paper or on screen.  **Consolidate (5 min.)**  - summarize what we noticed from both the small and large group share, such as range of applications of fraction concepts in the secondary curriculum, range of meanings, range of ways to represent fractions concepts  - show [www.101qs.com](http://www.101qs.com) – show some features – thinking of noticing and wondering, how might this site be used – possible comments such as set up for next day’s lesson, getting students in the habit of inquiry, accessing prior knowledge | Materials   * computer, projector * ppt of session * sticky notes * bar graph set up on chart paper or wall * video clip Fetter NCTM 2011 * Notice and Wonder worksheets * maybe begin list of curriculum connections * access to [www.101qs.com](http://www.101qs.com) |
| Minds On… |
| **Notice and Wonder**  55 min. |
|  | Introduce Activity (2 min.)  Reference plenary sessions – Marian on reasons students struggle with fractions – Shelley on fraction meanings and representations. The following activity is a “Minds On” for the plenary sessions.  Individual 🡪 Select a fraction and represent in many ways (10 min.)  Each participant will select/create a fraction – numeric, algebraic – and then represent it in as many ways as possible. They will write each representation of the fraction on a different sticky note. Have concrete materials available.  Group 2 or 3 tables 🡪 List, Group, Label (18 min.)  Give each larger group 1 or 2 pieces of chart paper and a marker. Each group pools their sticky notes, categorizes them into whatever categories seem appropriate, and then labels each category. Post chart paper. | Materials   * sticky notes * chart paper * markers * have concrete materials like linking cubes, square tiles |
| Action! |
| **Represent in Many Ways**  30 min. |
|  | Whole Group 🡪 Discussion of List, Group, Label Activity (5 min.)  Participants can take a few minutes to look at each group’s chart.  Engage whole group in responding to the following prompts:   * What criteria did you use to group the sticky notes on your page? * Which ones were difficult to place? * Were there some that you kept moving from category to category? Why?     Finish by noting the range of meanings and representations. Note also that the greater our understanding of the various meanings and range of representations of fraction concepts, the better able we will be able to understand how and why our students struggle, and what we can do to help. This should provide a lead-in for the plenary sessions. |  |
| Consolidate Debrief  5 min. |
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|  | Home Activity or Further Classroom Consolidation |  |